WHAT IS CLAIMED IS:

1. An information processing method of controlling access to computer resource(s) managed by an operating system, such as a file, network, storage device, display screen, or external device, comprising:

a trap step of trapping an operation request from a process or operating system for the computer resource before access to the computer resource;

a determination step of determining whether an access right for the computer resource designated by the operation request trapped in the trap step is present;

a processing step of, if it is determined in the determination step that the access right is present, transferring the operation request to the operating system and returning a result from the operating system to the request source process; and

a denial step of denying the operation request if it is determined in the determination step that no access right is present.

2. The method according to claim 1, wherein in the trap step, the operation request from the process or operating system for the computer resource is further trapped before access to the computer resource.

3. The method according to claim 1, wherein in the determination step, it is determined whether the access right is present by looking up an access right management table containing resource designation

information that designates a specific computer resource, condition information under which the access right is validated, and access right information that designates an access right that is extended but not defined in an existing environment.

4. The method according to claim 1, wherein in the determination step, it is determined whether the access right is present by looking up access right information that is described in the computer resource to designate an access right that is extended but not defined in an existing environment.

5. The method according to claim 1, wherein in the determination step, it is determined whether the access right is present by determining whether the access right can be acquired.

6. The method according to claim 3 or 4, wherein the access right information contains information that designates at least one of a right to move to another medium, a right to copy to another medium, a right to print, a right to write to a shared memory, a right to capture a screen, and a right to restrict use processes.

7. The method according to claim 1, wherein in the denial step, an access denial error message is returned to the request source process without any access to the requested computer resource.

8. The method according to claim 1, wherein in the denial step, a successful access message is returned to

the request source process without any access to the requested computer resource.

9. The method according to claim 1, wherein in the denial step, the operation request is converted into an operation request for a dummy computer resource and transferred to the operating system, and a result from the operating system is returned to the request source process.

10. An information processing apparatus for controlling access to computer resource(s) managed by an operating system, such as a file, network, storage device, display screen, or external device, comprising:

trap means for trapping an operation request from a process or operating system for the computer resource before access to the computer resource;

determination means for determining whether an access right for the computer resource designated by the operation request trapped by said trap means is present;

processing means for, if it is determined by said determination means that the access right is present, transferring the operation request to the operating system and returning a result from the operating system to the request source process; and

denial means for denying the operation request if it is determined by said determination means that no access right is present.

11. The apparatus according to claim 10, wherein said

trap means further traps the operation request from the process or operating system for the computer resource before access to the computer resource.

12. The apparatus according to claim 10, wherein said determination means determines whether the access right is present by looking up an access right management table containing resource designation information that designates a specific computer resource, condition information under which the access right is validated, and access right information that designates an access right that is extended but not defined in an existing environment.

13. The apparatus according to claim 10, wherein said determination means determines whether the access right is present by looking up access right information that is described in the computer resource to designate an access right that is extended but not defined in an existing environment.

14. The apparatus according to claim 10, wherein said determination means determines whether the access right is present by determining whether the access right can be acquired.

15. The apparatus according to claim 12 or 13, wherein the access right information contains information that designates at least one of a right to move to another medium, a right to copy to another medium, a right to print, a right to write to a shared memory, a right to

capture a screen, and a right to restrict use processes.

16. The apparatus according to claim 10, wherein said denial means returns an access denial error message to the request source process without any access to the requested computer resource.

17. The apparatus according to claim 10, wherein said denial means returns a successful access message to the request source process without any access to the requested computer resource.

18. The apparatus according to claim 10, wherein said denial means converts the operation request into an operation request for a dummy computer resource, transfers the operation request to the operating system, and returns a result from the operating system to the request source process.

19. A storage medium which stores program codes for controlling access to computer resource(s) such as a file, network, storage device, display screen, or external device, comprising:

a program code of a trap step of trapping an operation request from a process or operating system for the computer resource before access to the computer resource;

a program code of a determination step of determining whether an access right for the computer resource designated by the operation request trapped in the trap step is present;

a program code of a processing step of, if it is determined in the determination step that the access right is present, transferring the operation request to the operating system and returning a result from the operating system to the request source process; and

a program code of a denial step of denying the operation request if it is determined in the determination step that no access right is present.

20. The medium according to claim 19, wherein in the trap step, the operation request from the process or operating system for the computer resource is further trapped before access to the computer resource.

21. The medium according to claim 19, wherein in the determination step, it is determined whether the access right is present by looking up an access right management table containing resource designation information that designates a specific computer resource, condition information under which the access right is validated, and access right information that designates an access right that is extended but not defined in an existing environment.

22. The medium according to claim 19, wherein in the determination step, it is determined whether the access right is present by looking up access right information that is described in the computer resource to designate an access right that is extended but not defined in an existing environment.

23. The medium according to claim 19, wherein in the determination step, it is determined whether the access right is present by determining whether the access right can be acquired.

24. The medium according to claim 21 or 22, wherein the access right information contains information that designates at least one of a right to move to another medium, a right to copy to another medium, a right to print, a right to write to a shared memory, a right to capture a screen, and a right to restrict use processes.

25. The medium according to claim 19, wherein in the denial step, an access denial error message is returned to the request source process without any access to the requested computer resource.

26. The medium according to claim 19, wherein in the denial step, a successful access message is returned to the request source process without any access to the requested computer resource.

27. The medium according to claim 19, wherein in the denial step, the operation request is converted into an operation request for a dummy computer resource and transferred to the operating system, and a result from the operating system is returned to the request source process.

28. A program for causing a computer to control access to computer resource(s) such as a file, network, storage device, display screen, or external device, comprising:

a program code of a trap step of trapping an operation request from a process or operating system for the computer resource before access to the computer resource;

a program code of a determination step of determining whether an access right for the computer resource designated by the operation request trapped in the trap step is present;

a program code of a processing step of, if it is determined in the determination step that the access right is present, transferring the operation request to the operating system and returning a result from the operating system to the request source process; and

a program code of a denial step of denying the operation request if it is determined in the determination step that no access right is present.

29. The program according to claim 28, wherein in the trap step, the operation request from the process or operating system for the computer resource is further trapped before access to the computer resource.

30. The program according to claim 28, wherein if it is determined in the determination step that no access right is present, and access is denied in the denial step, an access right is permitted by charging.

31. The program according to claim 28, wherein the computer resource includes contents of a Web cast, digital broadcasting, and music distribution.

32. An information processing system constituted by connecting first and second terminals through a communication network, wherein

the first terminal comprises:

trap means for trapping an operation request from a process or operating system for computer resource(s) in the second terminal before access to the computer resource, and

the second terminal comprises:

determination means for determining whether an access right for the computer resource designated by the operation request trapped by said trap means is present;

processing means for, if it is determined by said determination means that the access right is present, transferring the operation request to the operating system in the first terminal and returning a result from the operating system to the request source process; and

denial means for denying the operation request if it is determined by said determination means that no access right is present.

33. A control method for an information processing system constituted by connecting first and second terminals through a communication network, comprising:

a trap step of, in the first terminal, trapping an operation request from a process or operating system for computer resource(s) in the second terminal before access to the computer resource;

a determination step of determining, in the second terminal, whether an access right for the computer resource designated by the operation request trapped in the trap step is present;

a processing step of, if it is determined in the determination step that the access right is present, transferring the operation request to the operating system in the first terminal and returning a result from the operating system to the request source process; and

a denial step of denying the operation request if it is determined in the determination step that no access right is present.

34. A storage medium which stores program codes of control for an information processing system constituted by connecting first and second terminals through a communication network, comprising:

a program code of a trap step of, in the first terminal, trapping an operation request from a process or operating system for computer resource(s) in the second terminal before access to the computer resource;

a program code of a determination step of determining, in the second terminal, whether an access right for the computer resource designated by the operation request trapped in the trap step is present;

a program code of a processing step of, if it is determined in the determination step that the access right is present, transferring the operation request to

the operating system in the first terminal and returning a result from the operating system to the request source process; and

a program code of a denial step of denying the operation request if it is determined in the determination step that no access right is present.

35. A program which causes a computer to control an information processing system constituted by connecting first and second terminals through a communication network, comprising:

a program code of a trap step of, in the first terminal, trapping an operation request from a process or operating system for computer resource(s) in the second terminal before access to the computer resource;

a program code of a determination step of determining, in the second terminal, whether an access right for the computer resource designated by the operation request trapped in the trap step is present;

a program code of a processing step of, if it is determined in the determination step that the access right is present, transferring the operation request to the operating system in the first terminal and returning a result from the operating system to the request source process; and

a program code of a denial step of denying the operation request if it is determined in the determination step that no access right is present.

36. An information processing apparatus connected to another terminal through a communication network, comprising:

trap means for trapping an operation request from a process or operating system for computer resource(s) in the other terminal before access to the computer resource; and

reception means for receiving a reply to the operation request.

37. An information processing apparatus connected to another terminal through a communication network, comprising:

determination means for determining whether an access right is present for computer resource(s) in the information processing apparatus, which is designated by an operation request for the computer resource trapped by the other terminal before access to the computer resource;

processing means for, if it is determined by said determination means that the access right is present, transferring the operation request to an operating system in the other terminal and returning a result to a request source process; and

denial means for denying the operation request if it is determined by said determination means that no access right is present.

38. An information processing method for an

information processing apparatus connected to another terminal through a communication network, comprising:

a trap step of trapping an operation request from a process or operating system for computer resource(s) in the other terminal before access to the computer resource; and

a reception step of receiving a reply to the operation request.

39. An information processing method for an information processing apparatus connected to another terminal through a communication network, comprising:

a determination step of determining whether an access right is present for computer resource(s) in the information processing apparatus, which is designated by an operation request for the computer resource trapped by the other terminal before access to the computer resource;

a processing step of, if it is determined in the determination step that the access right is present, transferring the operation request to an operating system in the other terminal and returning a result from the operating system to a request source process; and

a denial step of denying the operation request if it is determined in the determination step that no access right is present.

40. A storage medium which stores program codes of information processing of an information processing

apparatus connected to another terminal through a communication network, comprising:

a program code of a trap step of trapping an operation request from a process or operating system for computer resource(s) in the other terminal before access to the computer resource; and

a program code of a reception step of receiving a reply to the operation request.

41. A storage medium which stores program codes of information processing of an information processing apparatus connected to another terminal through a communication network, comprising:

a program code of a determination step of determining whether an access right is present for computer resource(s) in the information processing apparatus, which is designated by an operation request for the computer resource trapped by the other terminal before access to the computer resource;

a program code of a processing step of, if it is determined in the determination step that the access right is present, transferring the operation request to an operating system in the other terminal and returning a result from the operating system to a request source process; and

a program code of a denial step of denying the operation request if it is determined in the determination step that no access right is present.

42. A program which causes a computer to execute information processing of an information processing apparatus connected to another terminal through a communication network, comprising:

a program code of a trap step of trapping an operation request from a process or operating system for computer resource(s) in the other terminal before access to the computer resource; and

a program code of a reception step of receiving a reply to the operation request.

43. A program which causes a computer to execute information processing of an information processing apparatus connected to another terminal through a communication network, comprising:

a program code of a determination step of determining whether an access right is present for computer resource(s) in the information processing apparatus, which is designated by an operation request for the computer resource trapped by the other terminal before access to the computer resource;

a program code of a processing step of, if it is determined in the determination step that the access right is present, transferring the operation request to an operating system in the other terminal and returning a result from the operating system to a request source process; and

a program code of a denial step of denying the

operation request if it is determined in the determination step that no access right is present.

44. An information processing apparatus for converting digital information to restrict operations, comprising:

storage means for reading and storing the digital information;

first adding means for adding restricting attribute information to the digital information, wherein the restricting attribute information defines contents of operation restriction on the digital information;

second adding means for adding to a restricting program to the digital information, wherein the restricting program for monitoring and controlling operation(s) on the digital information; and

output means for outputting the digital information to which the restricting attribute information and restricting program are added by said first and second adding means altogether as data having an executable format.

45. An information processing apparatus using data having an executable format, comprising:

activation means for activating the data having the executable format, which contains digital information to which restricting attribute information that defines contents of operation restriction on the digital information and a restricting program for

monitoring and controlling operation(s) on the digital information are added;

read means for reading a restricting routine section for monitoring and controlling the operation(s) on the digital information from the restricting program and activating the restricting routine section;

acquisition means for acquiring a target application to operate the digital information from the restricting attribute information;

application activation means for activating the application acquired by said acquisition means;

determination means for determining whether the application has been successfully activated by said application activation means;

end means for ending activation of the data having the executable format when it is determined by said determination means that the activation of the application has failed;

operation means for decoding the digital information into a state operable from the application when it is determined by said determination means that the application has been successfully activated; and

processing means for transferring the decoded digital information to the activated application.

46. The apparatus according to claim 45, wherein when the restricting attribute information contains no application information that specifies the target

application, said application activation means automatically recognizes the application to be activated.

47. The apparatus according to claim 45, further comprising

first delete means for deleting the decoded digital information when the activated application has released the decoded digital information, and

second delete means for ending and deleting the activated restricting routine section when the activated application is ended.

48. An information processing method of converting digital information to restrict operations, comprising:

a storage step of reading and storing the digital information;

a first adding step of adding restricting attribute information to the digital information, wherein the restricting attribute information defines contents of operation restriction on the digital information;

a second adding step of adding a restricting program to the digital information, wherein the restricting program for monitoring and controlling operation(s) on the digital information; and

an output step of outputting the digital information to which the restricting attribute information and restricting program are added in the first and second adding steps altogether as data having

an executable format.

49. An information processing method using data having an executable format, comprising:

an activation step of activating the data having the executable format;

a read step of reading a restricting routine section for monitoring and controlling operation(s) on digital information from a restricting program and activating the restricting routine section;

an acquisition step of acquiring a target application to operate the digital information from restricting attribute information;

an application activation step of activating the application acquired in the acquisition step;

a determination step of determining whether the application has been successfully activated in the application activation step;

an end step of ending activation of the data having the executable format when it is determined in the determination step that the activation of the application has failed;

an operation step of decoding the original digital information into a state operable from the application when it is determined in the determination step that the application has been successfully activated; and

a processing step of transferring the decoded digital information to the activated application.

50. The method according to claim 49, wherein in the application activation step, when the restricting attribute information contains no application information that specifies the target application, the application to be activated is automatically recognized.

51. The method according to claim 49, further comprising

a first step of deleting the decoded digital information when the activated application has released the decoded digital information, and

a second delete step of ending and deleting the activated restricting routine section when the activated application is ended.

52. An information processing system constituted by connecting first and second terminals through a communication network, wherein

the first terminal comprises:

storage means for reading and storing digital information;

first adding means for adding restricting attribute information to the digital information, wherein the restricting attribute information defines contents of operation restriction on the digital information;

second adding means for adding a restricting program to the digital information, wherein the restricting program for monitoring and controlling

operation(s) on the digital information;

output means for outputting the digital information to which the restricting attribute information and restricting program are added by said first and second adding means altogether as data having an executable format; and

transmission means for transmitting the data having the executable format to the second terminal, and

the second terminal comprises:

reception means for receiving the data having the executable format from the first terminal;

activation means for activating the data having the executable format;

read means for reading a restricting routine section for monitoring and controlling the operation(s) on the digital information from the restricting program and activating the restricting routine section;

acquisition means for acquiring a target application to operate the digital information from the restricting attribute information;

application activation means for activating the application acquired by said acquisition means;

determination means for determining whether the application has been successfully activated by said application activation means;

end means for ending activation of the data having the executable format when it is determined by said

determination means that the activation of the application has failed;

operation means for decoding the digital information into a state operable from the application when it is determined by said determination means that the application has been successfully activated; and

processing means for transferring the decoded digital information to the activated application.

53. A program which causes a computer to execute information processing of converting digital information to restrict operations, comprising:

a program code of a storage step of reading and storing the digital information;

a program code of a first adding step of adding restricting attribute information to the digital information, wherein the restricting attribute information defines contents of operation restriction on the digital information;

a program code of a second adding step of adding a restricting program to the digital information, wherein the restricting program for monitoring and controlling operation(s) on the digital information; and

a program code of an output step of outputting the digital information to which the restricting attribute information and restricting program are added in the first and second adding steps altogether as data having an executable format.

54. A program which causes a computer to execute information processing using data having an executable format, comprising:

a program code of an activation step of activating the data having the executable format, which contains digital information to which restricting attribute information that defines contents of operation restriction on the digital information and a restricting program for monitoring and controlling operation(s) on the digital information are added;

a program code of a read step of reading a restricting routine section for monitoring and controlling operation(s) on digital information from a restricting program and activating the restricting routine section;

a program code of an acquisition step of acquiring a target application to operate the digital information from restricting attribute information;

a program code of an application activation step of activating the application acquired in the acquisition step;

a program code of a determination step of determining whether the application has been successfully activated in the application activation step;

a program code of an end step of ending activation of the data having the executable format when it is

determined in the determination step that the activation of the application has failed;

a program code of an operation step of decoding the digital information into a state operable from the application when it is determined in the determination step that the application has been successfully activated; and

a program code of a processing step of transferring the decoded digital information to the activated application.

55. The program according to claim 54, wherein in the application activation step, when the restricting attribute information contains no application information that specifies the target application, the application to be activated is automatically recognized.

56. The program according to claim 54, further comprising

a program code of a first step of deleting the decoded digital information when the activated application has released the decoded digital information, and

a program code of a second delete step of ending and deleting the activated restricting routine section when the activated application is ended.